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JF

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/387,894 09/01/99 GUHA

A 20721/04404

024024 IM52/1022  
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EXAMINER

WILKINS, JILL H

ART UNIT

PAPER NUMBER

1742

DATE MAILED:

10/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Case Number	Ctry	Sub Case	Action Due	Due Date
2072104404	US		2MO RESPONSE	22-Dec-2001
			3MO RESPONSE	22-Jan-2002
Action US FINAL O.A.			1ST EXTENSION	22-Feb-2002
Type:			2ND EXTENSION	22-Mar-2002
			FINAL EXTENSION	22-Apr-2002
			STATUS CHECK	22-May-2002

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Verified: \_\_\_\_\_

DOCKETED

OCT 25 2001

T.L.B. IP Dept.

# Office Action Summary

Application No.

09/387,894

Applicant(s)

GUHA ET AL

Examiner

Harry D Wilkins, III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2001.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12 and 15-34 is/are pending in the application.
- 4a) Of the above claim(s) 15-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12 and 22-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

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## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Newly submitted claims 15-21 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claims 15-21 recite an apparatus for die casting metal parts, and the original claims recite a tool for contacting a molten metal. Claims 15-21 would be classified in class 164, subclass 284. The original claims, 1-3, 5-10, as well as new claims 22-27 and 32-34 are classified in class 148, subclass 426. The original claims 11-12 and new claims 28-31 are classified in class 164, subclass 113. Because these inventions have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 15-21 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 6-12 and 22-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harkness et al.

1. Harkness et al disclose several Ni-Be alloys. One example contains 2 wt% Be, 0.5 wt% C and balance Ni and another contains 1.85 - 2.05 wt% Be, 0.4-0.6 wt% Ti and the balance Ni (pg. 423, Table 13). Harkness et al further disclose that the beryllium nickel casting alloys are used as tools (pg 423, col 1). Harkness et al disclose that the Ni-Be alloy can be unaged (pg. 426, Table 17).

2. In the present application, the Examiner finds that the taught alloy would have been expected to possess the ability to contact molten metal at elevated temperatures due to the elevated temperature strength (Fig 19).

3. (With respect to claim 2, Harkness et al disclose that many of the casting alloys are used in molds (pg 423, col 1). It is the Examiner's position that it would have been within the expected skill of a routineer in the art to use the conventional Ni-Be alloys for molds in casting of metals because the Ni-Be alloys have been known to be used as molds and the Ni-Be alloys provide good high temperature strength.

4. Regarding claims 3 and 5, Harkness et al disclose (see pg 426, Table 17) a thermal conductivity of 28 to 51.1 W/m-K (16.2-29.5 BTU/ ft-hr-°F).

5. Regarding claims 6, 24 and 29, Harkness et al disclose a hardness of the Ni-Be alloy being less than 90% of its peak aged hardness (pg 424, fig 17).

Regarding claims 7, 25 and 30, Harkness et al do not disclose a Ni-Be alloy where the hardness is 75% or less than its peak aged hardness. According to fig 17, harkness et al disclose a hardness of about 80% of the peak aged hardness.

had been  
102(b)  
rejection

102(b)

102(b)

102(b)

103

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103 { It would have been obvious to one having ordinary skill in the art at the time the invention was made to find an optimum hardness, since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Aller, 105 USPQ 233.

2 (b) { 6. Regarding claims 8, 26 and 31, Harkness et al disclose alloys containing C and Ti (pg 423, Table 13). Furthermore, Harkness et al disclose that the alloys can contain varying amounts of Cr, Mo, Al, Co and Ti (pg 426, col 1).

103 (b) { 7. Regarding claims 9 and 27, Harkness et al disclose 2.0 wt% Be (pg 423, Table 13).

102 (b) { Regarding claim 10, since the amount of Be in Harkness et al is 2.0 wt%, the Examiner finds that the taught alloy would have been expected to possess an amount of Be being sufficient so that a continuous coating of beryllium oxide forms on the surface of the tool, but not so great that the alloy becomes brittle.

8. Regarding claim 11, Harkness et al do not teach the type of molten metal which can be used in the disclosed mold.

103 { It is well known in the prior art that aluminum, magnesium, copper, zinc and their respective alloys are poured in molten form into a die and then allowed to solidify.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the mold of Harkness et al for solidification of aluminum, magnesium, copper, zinc and respective alloys because the Ni-Be alloys have high thermal conductivity and high elevated temperature strength.

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103 L9 Regarding claim 12, Harkness et al disclose 2.0 wt% Be (pg 423, Table 13).

Regarding claims 22, since the amount of Be in Harkness et al is 2.0 wt%, the Examiner finds that the taught alloy would have been expected to possess an amount of Be being sufficient so that a continuous coating of beryllium oxide forms on the surface of the tool, but not so great that the alloy becomes brittle.

10. Regarding claims 23, 28 and 32, Harkness et al disclose that the Ni-Be alloy can be unaged (pg. 426, Table 17).

11. Regarding claims 33 and 34, Harkness et al disclose 2.0 wt% Be (pg 423, Table 13).

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 703-305-9927. The examiner can normally be reached on M-F 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Harry D Wilkins, III  
Examiner  
Art Unit 1742

hdw  
October 18, 2001

  
**ROY KING**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**